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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|--------------------------------|------------------------|
| 10/771,897 | 02/04/2004 | Narasimhan Gautam | 15060-60 | 3893 |
| 69949 7590 05/15/2007 PATRICK W. RASCHE (15060) ARMSTRONG TEASDALE, LLP ONE METROPOLITAN SQUARE SUITE 2600 SAINT LOUIS, MO 63102-2740 | | | EXAMINER ROOKE, AGNES BEATA | |
| | | | ART UNIT 1656 | PAPER NUMBER |
| | | | MAIL DATE 05/15/2007 | DELIVERY MODE PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/771,897

Applicant(s)

GAUTAM ET AL.

Examiner

Agnes B. Rooke

Art Unit

1656

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-45 is/are pending in the application.
- 4a) Of the above claim(s) 7-34, 37 and 39-45 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 4-6 and 38 is/are allowed.
- 6) ☒ Claim(s) 1-3 and 35-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

This non-final office action is in response to the paper filed on 02/13/2007.

Status of Claims

Claims 1-45 are pending. Claims **1-6, 35-36, and 38** are under examination.

Priority

The priority is claimed to 60/445,113 filed on 02/05/2003 and 60/493,952 filed on 08/08/2003.

Rejection Withdrawn

The rejection of claims 1-6, 35, 36, and 38, under the 35 USC 102(a) as being anticipated by Devreotes et al. (U.S. 2002/0048811) is withdrawn because the prior art as cited did not disclose G mammalian protein, but protein of different origin.

New Rejection

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claims 35 and 36 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 35, it is not clear what is meant by "the tethered receptor reduces" since the meaning of the "tethered" is not defined in a claim. Thus, further clarification of the aforementioned term is required to make the claim definite.

Claim 36 does not further limit claim 35, from which it depends. Thus, the claim is indefinite.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Devreotes et al. (U.S. 2002/0048811) in view of Wittamer et al. (U.S. 2003/0104478).

Devereotes et al. teach receptor mediates activation of heterotrimeric G-proteins that is visualized in living cells by monitoring fluorescence resonance energy transfer (FRET) between subunits of G-protein fused to cyan and yellow fluorescent proteins. See Abstract.

In Example 1, page 4 in [0044-0045], Devreotes et al. teach fusion of yellow fluorescent proteins to the amino end of G protein subunit β ; also they teach fusing fluorescent proteins into G protein, such as $G\alpha 2$; further, FRET was used to observe the state of the G-protein heterotrimer in living cells. (See instant claims 1-3).

Devreotes et al. do not teach G mammalian protein.

Wittamer et al. teach mammalian G protein, see [0008]; where the invention relates to G-protein receptor and screening assays for the identification of candidate compounds and G protein coupled receptor signaling, see Abstract.

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to substitute the G protein of Devreotes et al. with the G mammalian protein of Whittamer et al. since G proteins of different origin will have the same function and the same mode of action when acting in a functional biosensor.

One would be motivated to use a mammalian G protein in a biosensor because such designs are known in the art and proven to be successful.

Conclusion

Claims 4-6 and 38 are allowable.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Agnes Rooke whose telephone number is 571-272-2055. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jon Weber can be reached on 571-272-0925. The fax phone number for the organization where this application or proceeding is assigned is 571-272-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have

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any questions on access to the Private PAIR system, contact the Electronic Business

Center (EBC) at 866-217-9197.

AM

Karen Cochrane Carlson PhD

KAREN COCHRANE CARLSON, PH.D
PRIMARY EXAMINER